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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,045	09/15/2000	Jeffrey Scott Kuskin	73139/0269870	3408

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Pillsbury , Winthrop LLP
1600 Tyson Boulevard
McLean, VA 22102

EXAMINER
DUONG, FRANK

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

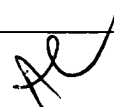| | Application No. | Applicant(s) |
Office Action Summary	09/663,045	KUSKIN ET AL.
	Examiner	Art Unit
	Frank Duong	2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is a response to communications dated 08/19/04. Claims 1-37

are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Hioe et al

(USP 6,341,145) (hereinafter "Hioe").

Regarding **claim 1**, *in accordance with Hioe reference entirety*, Hioe discloses

a hardware system (Figs. 2-3) for performing media access control functions between a

host central processing unit (101) and a network (207), the system comprising:

a buffer interface (300 or 202) (**col. 6, lines 33-34, interface section 202**

includes elements 300 and 330) that sends frames to the host central processing unit

and receives frames from the central processing unit (*col. 6, lines 45-57 and*

thereinafter);

a frame transmitter (203 and 210) that includes a transmit buffer (306-310 and

302-304) that receives frames from the buffer interface and sends frames to the network

(col. 6, line 63 to col. 7, line 7, **Hioe discloses data from input interface 300 is transmitted to WeP 302 at a predetermined time and incorporated into a packet for radio transmission**. *After that the packet is coded, error control coded and encrypted if deemed necessary. Then, a digital signal is converted into an analog signal by a baseband modulation block (BB-mod) 306 to generate an analog waveform for modulating into an IF signal, then upconverted into an RF signal for transmission*);

a frame receiver (205 and 206) that includes a receive buffer (336-340 and 332-334) that receives frames from the network and sends frame to the buffer interface (*col. 7, lines 13-19, Hioe discloses the RF signal is received at 340, downconverted into IF signal at 338, demodulated into digital signal at 336, decrypted, error correction and encoding at 334.* ***In block 332, digital signals are taken out of wireless packet and arranged in the correct order and held in an output interface 330 until they are output***); and

an encryption/decryption block (*304 and 334*) that sends and receives frame between the transmit buffer and the receive buffer (*col. 6, lines 60-63 and col. 7, lines 19-21*).

Regarding **claim 2**, in accordance with Hioe reference entirety, Hioe discloses a method (Figs. 2-3) for processing frames from a network to a host in a media access control layer with hardware operations, the method comprising:

receiving an incoming frame from the network (*col. 7, lines 10-27 and thereinafter*); and

processing, using operations implemented by hardware in an integrated circuit (*col. 5, line 8, functional block*), the incoming frame for time-critical functions the time critical functions (*col. 7, lines 10-27 and thereinafter*) including:

sending an outgoing frame corresponding to the incoming frame to the host (*col. 7, lines 10-27*);

formulating time-critical response (*col. 7, lines 35-42 and thereinafter*);

accumulating statistics (*col. 7, lines 42-50 and thereinafter*); and

updating a media access control state (*col. 7, lines 50-57 and thereinafter*).

Regarding **claim 3**, in addition to the features recited in base claim 1 (see rationales discussed above), Hioe further discloses wherein the frame transmitter includes a transmit state machine (312), the frame receiver includes a receive state machine (342), and further including:

a cyclic redundancy code block (*304 and 334*) that receives frames from a receive state machine (342) and a transmit buffer and sends frames to the transmit state machine (312) (*col. 6, lines 60-63 and col. 7, lines 19-21*); and

a timer block (not shown; inherent)that control timing for frames that are respectively sent from and received by the system (*col. 10, lines 40-41*).

Regarding **claim 4**, in addition to the features recited in base claim 1 (see rationales discussed above), Hioe further discloses wherein the frame receiver further includes a filtering block for filtering frames (*Fig. 10B and col. 12, lines 37-53 and thereinafter*).

Regarding **claim 5**, in addition to the features recited in base claim 1 (see rationales discussed above), Hioe further discloses wherein the frame receiver further includes a retry operations block for determining when retransmission of the particular frame is needed (*col. 9, lines 41-62; col. 10, lines 23-30 and thereinafter*).

Regarding **claim 6**, in addition to the features recited in base claim 1 (see rationales discussed above), Hioe further discloses wherein the frame transmitter include an acknowledgement block for determining that a particular frame was anticipated and sending an acknowledgement message corresponding thereto (*col. 5, lines 63-66 and thereinafter*).

Regarding **claim 7**, in addition to the features recited in base claim 1 (see rationales discussed above), Hioe further discloses wherein the frame transmitter further includes a special frames generation block (*see Figs. 9A-B*).

Regarding **claim 8**, in addition to the features recited in base claim 7 (see rationales discussed above), Hioe further discloses wherein the special frames generation block includes means for generating beacons (*not shown; a pilot signal or channel is inherent in TDMA or CDMA wireless system*).

Regarding **claim 9**, in addition to the features recited in base claim 1 (see rationales discussed above), Hioe further discloses a timer block that controls timing for frames that are sent from and received by the system (*col. 9, line 36 and col. 10, lines 40-41*).

Regarding **claim 10**, in addition to the features recited in base claim 9 (see rationales discussed above), Hioe further discloses wherein the frame transmitter

includes a transmit state machine (312), the frame receiver includes a receive state machine (342), and further including:

a timer block (not shown; inherent)that control timing for frames that are respectively sent from and received by the system (*col. 10, lines 40-41*).

Regarding **claim 11**, in addition to the features recited in base claim 9 (see rationales discussed above), Hioe further discloses wherein the frame receiver further includes a filtering block for filtering frames (*Fig. 10B and col. 12, lines 37-53 and thereinafter*).

Regarding **claim 12**, in addition to the features recited in base claim 9 (see rationales discussed above), Hioe further discloses wherein the frame receiver further includes a retry operations block for determining when retransmission of the particular frame is needed (*col. 9, lines 41-62; col. 10, lines 23-30 and thereinafter*).

Regarding **claim 13**, in addition to the features recited in base claim 9 (see rationales discussed above), Hioe further discloses wherein the frame transmitter include an acknowledgement block for determining that a particular frame was anticipated and sending an acknowledgement message corresponding thereto (*col. 5, lines 63-66 and thereinafter*).

Regarding **claim 14**, in addition to the features recited in base claim 9 (see rationales discussed above), Hioe further discloses wherein the frame transmitter further includes a special frames generation block (*see Figs. 9A-B*).

Regarding **claim 15**, in addition to the features recited in base claim 14 (see rationales discussed above), Hioe further discloses wherein the special frames

generation block includes means for generating beacons (*not shown; a pilot signal or channel is inherent in TDMA or CDMA wireless system*).

Regarding **claim 16**, in accordance with Hioe reference entirety, Hioe discloses a hardware system (Figs. 2-3) for performing media access control functions between a host central processing unit (101) and a network (207), the system comprising:

a buffer interface (300) that sends frames to the host central processing unit and receives frames from the central processing unit (*col. 6, lines 45-57 and thereinafter*);

a frame transmitter (203) that includes a transmit buffer (306-310) that receives frames from the buffer interface and sends frames to the network (col. 6, line 63 to col. 7, line 7);

a frame receiver (205) that includes a receive buffer (336-340) that receives frames from the network and sends frame to the buffer interface (*col. 7, lines 13-19*); and

a timer block (*not shown; inherent*)that control timing for frames that are respectively sent from and received by the system (*col. 10, lines 40-41*).

Regarding **claim 17**, in addition to the features recited in base claim 16 (see rationales discussed above), Hioe further discloses wherein the frame transmitter includes a transmit state machine (312), the frame receiver includes a receive state machine (342), and further including:

a cyclic redundancy code block (*304 and 334*) that receives frames from a receive state machine (342) and a transmit buffer and sends frames to the transmit state machine (312) (*col. 6, lines 60-63 and col. 7, lines 19-21*).

Regarding **claim 18**, in addition to the features recited in base claim 16 (see rationales discussed above), Hioe further discloses wherein the frame receiver further includes a filtering block for filtering frames (*Fig. 10B and col. 12, lines 37-53 and thereinafter*).

Regarding **claim 19**, in addition to the features recited in base claim 16 (see rationales discussed above), Hioe further discloses wherein the frame receiver further includes a retry operations block for determining when retransmission of the particular frame is needed (*col. 9, lines 41-62; col. 10, lines 23-30 and thereinafter*).

Regarding **claim 20**, in addition to the features recited in base claim 16 (see rationales discussed above), Hioe further discloses wherein the frame transmitter include an acknowledgement block for determining that a particular frame was anticipated and sending an acknowledgement message corresponding thereto (*col. 5, lines 63-66 and thereinafter*).

Regarding **claim 21**, in addition to the features recited in base claim 16 (see rationales discussed above), Hioe further discloses wherein the frame transmitter further includes a special frames generation block (*see Figs. 9A-B*).

Regarding **claim 22**, in addition to the features recited in base claim 21 (see rationales discussed above), Hioe further discloses wherein the special frames generation block includes means for generating beacons (*not shown; a pilot signal or channel is inherent in TDMA or CDMA wireless system*).

Regarding **claim 23**, in addition to the features recited in base claim 16 (see rationales discussed above), Hioe further discloses an cryption/decryption block (*304*

and 334) that sends and receives frame between the transmit buffer and the receive

buffer (*col. 6, lines 60-63 and col. 7, lines 19-21*).

Regarding **claim 24**, in addition to the features recited in base claim 2 (see

rationales discussed above), Hioe further discloses wherein the time critical function of

formulating time-critical responses includes formulating an outgoing response frame for

transmission to the network (*col. 7, lines 35-42 and thereinafter*).

Regarding **claim 25**, in addition to the features recited in base claim 24 (see

rationales discussed above), Hioe further discloses wherein the time critical function of

formulating an outgoing response frame include transmitting the outgoing response

frame to the network (*col. 7, lines 35-42 and thereinafter*).

Regarding **claim 26**, in addition to the features recited in base claim 25 (see

rationales discussed above), Hioe further discloses wherein the method of formulating

an outgoing response frame includes generating a special frame (*see Figs. 9A-B*).

Regarding **claim 27**, in addition to the features recited in base claim 26 (see

rationales discussed above), Hioe further discloses wherein the special frame includes

a beacon (*not shown; a pilot signal or channel is inherent in TDMA or CDMA wireless

system*).

Regarding **claim 28**, in addition to the features recited in base claim 2 (see

rationales discussed above), Hioe further discloses wherein the method of formulating

an outgoing response frame includes receiving an incoming frame from the host central

processing unit (101) corresponding to the outgoing response frame (*col. 5, line 10 and

thereinafter*).

Regarding **claim 29**, in addition to the features recited in base claim 2 (see rationales discussed above), Hioe further discloses wherein the time critical functions implemented by hardware operations include decrypting the incoming frame.

Regarding **claim 30**, in addition to the features recited in base claim 2 (see rationales discussed above), Hioe further discloses wherein the time critical functions implemented by hardware operations include determining whether retransmission of a particular frame is needed (*col. 9, lines 41-62; col. 10, lines 23-30 and thereinafter*).

Regarding **claim 31**, in addition to the features recited in base claim 2 (see rationales discussed above), Hioe further discloses wherein the time critical functions implemented by hardware operations include determining whether a particular frame was anticipated and sending an acknowledgement message corresponding thereto (*col. 5, lines 63-66 and thereinafter*).

Regarding **claim 32**, in addition to features recited in base claim 1 (see rationales discussed above), Hioe further discloses wherein the buffer interface, frame transmitter, frame receiver and encryption/decryption block implemented certain functions of a media access control (MAC) sublayer in accordance with IEE 802.11 (*col. 13, lines 57-65, Hioe et al. discloses the invention is compliant with CDMA method by frequency hopping. Thus, it is inherent that the invention is compliant with IEEE 802.11, a frequency hopping based protocol*).

Regarding **claim 33**, in addition to features recited in base claim 16 (see rationales discussed above), Hioe further discloses wherein the buffer interface, frame transmitter, frame receiver and timer block implemented certain functions of a media

access control (MAC) sublayer in accordance with IEE 802.11 (*col. 13, lines 57-65,*

Hioe et al. discloses the invention is compliant with CDMA method by frequency

hopping. Thus, it is inherent that the invention is compliant with IEEE 802.11, a

frequency hopping based protocol).

Regarding **claim 34**, in addition to features recited in base claim 2 (see

rationales discussed above), Hioe further discloses wherein the time-critical functions

comprise certain functions of a media access control (MAC) sublayer in accordance

with IEE 802.11 (*col. 13, lines 57-65, Hioe et al. discloses the invention is compliant*

with CDMA method by frequency hopping. Thus, it is inherent that the invention is

compliant with IEEE 802.11, a frequency hopping based protocol).

Regarding **claim 35**, in addition to features recited in base claim 1 (see

rationales discussed above), Hioe further discloses wherein the buffer interface, frame

transmitter, frame receiver and encryption/decryption block are together comprised of a

single integrated circuit (*col. 5, line 8, functional block*).

Regarding **claim 36**, in addition to features recited in base claim 16 (see

rationales discussed above), Hioe further discloses wherein the buffer interface, frame

transmitter, frame receiver and encryption/decryption block are together comprised of a

single integrated circuit (*col. 5, line 8, functional block*).

Regarding **claim 37**, in addition to features recited in base claim 2 (see

rationales discussed above), Hioe further discloses wherein the integrated circuit is

comprised of a single integrated circuit (*col. 5, line 8, functional block*).

Response to Arguments

3. Applicant's arguments filed 08/19/04 have been fully considered but they are not

persuasive.

In the Remarks of the outstanding response, on page 11 continues to page 13,

first paragraph, pertaining the rejection under 35 U.S.C. § 102(e) of claim 1, Applicants

give a detail analysis of Hioe reference and argue "*Clearly, Hioe's elements 306-310 do*

not buffer frames. Rather, they receive data packets at a predetermined timing via

digital signals and converted the digital signals to analog waveforms … patentably

defines over Hioe for at least this additional reason".

In response Examiner respectfully disagrees and asserts the Hioe reference

does indeed clearly anticipate the claimed invention. Perhaps, there identifiers pointing

to Hioe's disclosed elements in the Office Action dated 05/19/04 did not satisfy the

Applicant's attention. However, the Office Action did clearly state ***in accordance with***

Hioe reference entirety, Hioe discloses the claimed invention. In respond to the

argument that Hioe fails to teach the claimed "a frame transmitter" and "a frame

receiver", Examiner would like the Applicants to revisit Hioe reference. At col. 6, line 63

to col. 7, line 7, Hioe discloses data from input interface 300 is transmitted to WeP 302

at a predetermined time and incorporated into a packet for radio transmission. Coding

for radio transmission, error control coding, and encryption if necessary are applied to

the packeted data by an encoding. The recitation thereat clearly anticipated the claimed

limitation of "*a frame transmitter (210 or (302-303) and 203) that includes a receive*

buffer (302 and 304) that receives frames (packets) from the buffer interface (202 and

300) and sends (203 and 312) frames to the network". At col. 7, lines 13-19, Hioe

discloses the RF signal is received at 340, downconverted into IF signal at 338,

demodulated into digital signal at 336, decrypted, error correction and encoding at 334.

In block 332, digital signals are taken out of wireless packet and arranged in the correct

order and held in an output interface 330 until they are output. The recitation thereat

clearly anticipated "a frame receiver (205 and 206) that includes a receive buffer (332-

334) that receives frames (packets) from the network and sends frame to the buffer

interface (*202 and 330)*. Thus, contradistinction to the Applicants' argument, Hioe does

indeed anticipate the claimed invention. As for the argument Hioe fails to disclose the

encryption block, please see Hioe reference pertaining the description of block 304 at

col. 6, lines 62-63 and block 332 at col. 7, lines 18-19.

Also in the Remarks of the outstanding response, on page 13 continues to page

14, first two paragraph, pertaining the rejection of claim 16 as being anticipated by Hioe

reference, Applicants argue "*In addition to the missing subject matter ... inherency basis*

for the rejection of claim 16 is improper, and that claim 16 further patentably defines

over Hioe for this additional reasons".

In response Examiner respectfully disagrees and asserts the rejection of claim 16

is proper. There is no doubt that Hioe disclosed the claimed invention of base claim 1

(see rationales discussed above). Claim 16 mirrors claim 1; however, claim 16 calls for

additional feature of "a timer block that control timing for frames that are respectively

sent from and received by the system. Hioe reference does not explicitly show this

feature. However, Examiner has asserted in the Office Action this feature is inherent

because at col. 4, line 45 and thereinafter, Hioe's invention is compliant with Time

Division Multiple Access (TDMA) method and system. TDMA system is a clock-based

system. Thus, it is inherent that there is a timer or a clock in Hioe's system to keep it in

sync. Thus, claim 16 is properly rejected. Should the Applicants dispute the

Examiner's position, please further consult technical references on TDMA system that

must have a clock in order for it to work.

As for the argument pertaining the newly added feature in the amended claim 2,

please see the Office Action. It is noted that the specification of the instant application

does not disclose the limitation of "using operations implemented by hardware in an

integrated circuit" is a novel and unobvious feature.

As for the arguments pertaining the dependent claims 3-8, 10-15 and 17-23,

please see the Office Action for the responses.

As for arguments pertaining the newly added claims 32-37, they do not add new

features that deem to be novel and unobvious over the applied art. Please see the

Office Action for the responses, accordingly.

Examiner believes an earnest attempt has been made in addressing all of the

Applicants' arguments. Due to the amendment fails to place the application in a

favorable condition for allowance and the arguments are not persuasive, the rejection is

maintained.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (571) 272-3164. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

Frank Duong
Examiner
Art Unit 2666

December 17, 2004